OPEN ACCESS Freely available online

Journal of Biomolecular Research & Therapeutics

Editorial

Editorial Note on Molecular Onchology

Deaniele G

Department of Biotechnology, Technical University of Denmark, Lyngby, Denmark

EDITORIAL

The study of the chemistry of cancer and tumors at the molecular scale is referred to as molecular oncology, an interdisciplinary medical discipline at the intersection of medicinal chemistry and oncology. Molecularly targeted therapies are now being developed and used. Molecular oncology has discovered genes that play a role in cancer growth. To study biological and clinical phenotypes, the researchers used a variety of techniques including genomics, computational biology, tumor imaging, *in vitro* and *in vivo* functional models. These genes' proteins could be used as templates for new chemotherapy drugs and other cancer therapies, as well as imaging scans. Scientists use a variety of methods to confirm the function of novel candidate genes in cancer growth. The ultimate goal is to convert these results into better cancer care choices. Many different genes are being investigated as potential cancer treatments. The p53 gene and the PTEN gene are two of the most studied.

These genes are important regulators of the cell cycle and other cellular and genomic integrity pathways. These genes stop the cell cycle, ensuring that genetically altered cells do not pass on their damage to daughter cells. The cell cycle may be halted, and the p53 and PTEN gene pathways may signal the death of the damaged cells if the damage is significant enough. Both the p53 and PTEN genes are tumour suppressors since their pathways supervise the repair of cells that may multiply out of control with damaged genetic material, ultimately contributing to cancer growth if not regulated. Immune gene therapy is a form of cancer treatment in which the patient's own immune cells and genes are engineered to create an anti-tumor response.

Since the tumour cells are attacked by the body's own immune system, the immune system will naturally target the same cancer cells again in the future if necessary. Bone marrow transplants, antibody treatments, and multiple manipulations of host immune cells to target and kill cancer cells are all examples of immunotherapies. These cellular manipulations to target cancer cells include cellular receptors, antigens, and cofactor molecules. Antigen receptor chimeric T cell immunotherapy (CAR-T), which may be used in combination with cytokines and checkpoint inhibitors, is a common form of immune gene therapy. CAR-T involves engineering a chimeric antigen receptor into a patient's normal T cells. This receptor, which is now found on millions of T cells in the patient, detects cancerous cells that express unique antigens.

The T cell antigen receptor is normally inactive, but when it detects a specific cancerous antigen, the T cell's physical structure changes in order to kill the cancer cell. This is a cancer treatment approach that operates at both the cellular and molecular levels. T cells' ability to replicate within the body has been shown to be reduced by regulatory proteins, specifically immune checkpoint inhibitors. These checkpoint inhibitors can be blocked to induce a strong anti-tumor immune response led by CAR-T cells, which will improve the effectiveness of CAR-T gene therapy. On the CAR-T cell, there are a number of inhibitory receptors that have been identified.

Correspondence to: Deaniele G, Department of Biotechnology, Technical University of Denmark, Lyngby, Denmark, E-mail: daniele.delrio@unipr.it

Received: May 15, 2021, **Accepted:** May 20, 2021, **Published:** May 25, 2021

Citation: Deaniele G (2021) Editorial Note on Molecular Onchology. J Biol Res Ther. Vol:10 Iss:5: 158

Copyright: © 2021 Deaniele G. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.